

<110> LG CHEM, LTD.

<120> Poly(3-hydroxyalkanoate) Block Copolymer Having Shape Memory Effect

<130> LC05PCT042

<150> KR 10-2005-0059907

<151> 2005-07-04

<160> 18

<170> KopatentIn 1.71

<210> 1

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Choi3 (PCR Primer)

<400> 1

ccggccstgsa tcaagtac

18

<210> 2

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Choi4 (PCR Primer)

<400> 2

gytsgtgsgy tcyycggtcc

20

<210> 3

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> HJ-PHB-N (PCR Primer)

<400> 3

caccatgctg agttgcgctc tagc

24

<210> 4

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> HJ-PHB-C (PCR Primer)

<400> 4

tcadmsytty acrtarcgkc ctggyc

<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> SCL-1 (PCR Primer)

<400> 5
gatcgataacc aatctcaccg 20

<210> 6
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> SCL-2 (PCR Primer)

<400> 6
caaagccagt ggttcgacgt a 21

<210> 7
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> SCL-3 (PCR Primer)

<400> 7
ctgctgaaac tgttggagc 19

<210> 8
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> SD-BA-N (PCR Primer)

<400> 8
gggggtacca ataaggagat atacatatgg gtactgcgag caatgcg 47

<210> 9
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> BA-C (PCR Primer)

2F06463

<400>	9					
cccaactagtt	cagcgctcga	tggccagc	28			
<210>	10					
<211>	28					
<212>	DNA					
<213>	Artificial Sequence					
<220>						
<223>	SD-phbc-N (PCR Primer)					
<400>	10					
gggcatatga	cccagaagaa	caacagcg	28			
<210>	11					
<211>	39					
<212>	DNA					
<213>	Artificial Sequence					
<220>						
<223>	phbc-c (PCR Primer)					
<400>	11					
cccaactagtt	cadmscttya	crtaaacgtcc	tggcgcygc	39		
<210>	12					
<211>	756					
<212>	DNA					
<213>	Pseudomonas sp. HJ-2					
<220>						
<221>	variation					
<222>	(482)					
<223>	n=A, C, G or T					
<400>	12					
atgggtactg	cgagcaatgc	ggcacgtata	gctctggta	ccgggttat	ggcggtatc	60
ggtacggcga	tcagccagcg	cctgcattcg	gatggcttca	ccgtggtggt	gggctgtaat	120
ccctactcca	gccgcaaggc	ttcctggatt	gccacgcaac	tcgaggcggg	ctttcacttc	180
cactgcattcg	actgcgacat	caccgactgg	gatagcaccc	gccaggcctt	cgacatggtg	240
cacgagactg	tcggcccgat	cgatgtattg	gtcaacaatg	ccggcatcac	ccgcgacggc	300
actttccgca	agatgtcccc	ggaaaactgg	aaggcggtga	tcgataccaa	tctcaccggc	360
ctgttcaaca	caaccaagca	ggtcatcgag	ggcatgctgg	ccaagggtcg	gggacgcgtc	420
atcaacatct	cctcaatcaa	tggccagcga	ggccagttcg	ggcagaccaa	ctactccgca	480
gncaaggctg	gcattcatgg	ttcagcatg	gccttggccc	gctggatgt	tggcaagggc	540
gtgaccgtca	atacggtttc	ccctggctac	atcaagaccg	acatgaccgc	ggcgattcgc	600
ccggacatcc	tcgaagacat	gattactggc	attccgtgg	gccgtctcgg	ccagcccgag	660

2F06463

gagatgcct	cgatcggtgc	ctggctggcc	tccgatcagt	ctgcctatgc	caccggcgcc	720
gacttctcg	tgaatggcg	catgaacatg	cagtga			756
<210>	13					
<211>	1179					
<212>	DNA					
<213>	Pseudomonas sp. HJ-2					
<220>						
<221>	variation					
<222>	(207)					
<223>	n=A, C, G or T					
<220>						
<221>	variation					
<222>	(209)					
<223>	n=A, C, G or T					
<400>	13					
atgatcgaag	tcgttatcgt	cgccgccact	cgcaccgcca	tcggcgcttt	ccaggggagc	60
ctggccggca	ctcccggccgt	tgaactgggc	gccacgggtga	tccgcccgcct	gctcgaacag	120
accgctctgg	atagcagtca	ggtggatgaa	gtgatactcg	gccacgtact	caccgcccgt	180
gctggcagaa	taccgctcgc	caggcancng	gtcatcgccg	gcctgccaca	cgccgttaccg	240
gcatgatgacc	tgaacaaggt	ctgtggctcc	ggcctgaaag	ccctgcacct	gggcgcccag	300
gccatccgct	gtggcgatgc	cgaggtggtg	attgccggtg	gcatggagaa	catgagcctg	360
tcgtccttatg	tcctgccccaa	ggcccgacc	ggcctgcfga	tgggccacgc	gcagctggtc	420
gacagcatga	tcgtcgacgg	cctgtggac	gccttcaacg	actaccacat	ggggatcact	480
gccgagaacc	tggtagacaa	gtacggcatc	agccgcgaag	cccaggacga	attcgccgccc	540
gcctcgccagc	agaaagccgt	ggccgccatc	gagaccggtc	gcttccgcga	cgagatcg	600
ccggtgagca	ttccgcagcg	caagggcgag	gcgctgagct	tcgacaccga	cgaacagcca	660
cgcgcccggca	ccaccgcccga	gtcgctggc	aagctgaaac	cggccttcaa	gaacgacggc	720
agcgttactg	ccggcaacgc	ttccagtctc	aacgacggcg	ccgcccgggt	actgctgatg	780
agtgcggcaa	aggccgcagc	gcttggtctg	ccagtgctgg	cgaagatcgc	cgcctacgccc	840
aatgccggcg	tcgacccggc	gatcatgggt	atcggaccgg	tgtcggccac	ccgcagttgc	900
ctggagaagg	cgggctggag	tctggcagag	ctggatctga	tcgaggccaa	tgaagccttc	960
cgcccagg	ccctggccgt	gggtcaggag	ctgggctggg	atgctggcag	ggttaacgtc	1020
aacggcggcg	ccatcgccct	cggccacccc	attggcgctt	ccggctgccc	cgtactggtc	1080
agcctgctgc	atgaaatgct	caggcgcac	gcgaaaaaaag	gcctcgctac	cctgtgtatc	1140
ggtggcggcc	agggcggtggc	gctggccatc	gagcgctga			1179

2F06463

<210> 14
 <211> 1701
 <212> DNA
 <213> Pseudomonas sp. HJ-2

<400>	14																	
atggacaacg	gacacacacctt	tgctca	tac	tc	ttgtcg	gg	tc	aggcgc	cc	ttt	catcg	cc	agc	60				
ttcgtc	cctgc	agca	actgc	g	cttata	acgt	g	cgca	aaa	a	cttgg	ttc	ag	cg	gg	120		
caaagcc	agt	ggttc	gacgt	ac	ctgt	cgag	gc	gttgg	gagc	a	actgc	aggc	gg	actac	aa	180		
caac	agt	ggg	ccga	actt	gg	ccag	caatt	g	ctgag	ctg	cc	agcgtt	cg	attc	agcg	at	240	
cg	tcg	cttc	g	ccag	tgg	caa	ctgg	agc	aa	ccg	ctgtt	cg	gttcc	ctgg	tg	ccctt	tac	300
ctg	ctg	taatt	ccgg	ttt	cct	gctgaa	actg	ttgg	agcttc	tccc	ccat	cg	tg	agc	aga	ag	360	
cccc	gcc	c	gctt	gcgtt	a	tttgc	atcg	ca	aggc	att	cc	gca	agc	gc	ccc	aa	gt	420
ttt	ctg	ctg	ta	gca	acc	ctg	ta	tg	ccct	tg	cc	cgct	atg	cc	cc	cc	ta	480
cta	agt	ggcc	tgtt	gc	atct	tgcc	agtg	ac	tc	gcagg	ca	gat	tc	g	cc	cc	cc	540
tt	gg	cg	att	tc	gat	tc	g	cc	acc	ac	cc	gttgc	ccgt	gt	tact	gg	aa	600
acc	cc	ct	gt	cc	at	tg	ct	cg	at	tc	cc	tc	cc	gt	cc	cc	cc	660
at	att	cat	gg	tcc	cc	c	ct	gt	cc	tt	cc	tc	cc	tc	cc	cc	cc	720
tct	cta	at	cc	gt	cat	ct	act	gg	ag	cg	agg	gc	ca	tc	cc	cc	cc	780
ttc	act	tc	agg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	840
gcc	ct	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	900
atc	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	960
att	gcc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1020
gtc	tt	cc	gt	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1080
aa	at	gt	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1140
gag	ct	gt	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1200
gt	t	ct	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1260
ct	g	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1320
a	ag	tt	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1380
atc	gt	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1440
gtc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1500
catt	act	tt	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1560
cag	catt	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1620
cg	ca	gg	tt	gg	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	cc	1680

2F06463

ggacgttatg tgaagctatg a

1701

<210> 15
<211> 3933
<212> DNA
<213> Pseudomonas sp. HJ-2

<220>
<221> variation
<222> (608)
<223> n=A, C, G or T

<220>
<221> variation
<222> (1134)
<223> n=A, C, G or T

<220>
<221> variation
<222> (1136)
<223> n=A, C, G or T

<400> 15
gagctcaatg cgccgcaggaa ctggtgtcg aggacaaccc ggcgtcaccc gggacattg 60
ttcacatccg caaagcgcca gagacttgcc cgctgttcca aggtcttaat taacgaggaa 120
tggtaatgg gtactgcgag caatgcggca cgtatagctc tggtcaccgg tggtatggc 180
ggtatcggtt cggcgatcag ccagcgctg catcgggatg gtttcaccgt ggtggtggc 240
tgtaatccct actccagccg caaggcttcc tggattgccca cgcaactcga ggcgggcttt 300
cacttccact gcatcgactg cgacatcacc gactggata gcacccgcca ggccttcgac 360
atggtgacg agactgtcg cccgatcgat gtattggtca acaatgccgg catcacccgc 420
gacggactt tccgcaagat gtccccggaa aactggaagg cggtgatcga taccaatctc 480
accggcctgt tcaacacaac caagcaggc atcgaggga tgctggccaa gggctgggaa 540
cgcgcatca acatctcctc aatcaatggc cagcgaggcc agttcgggca gaccaactac 600
tccgcggnc aaggctggcat tcattggcttc agcatggcct tggcccgca ggtgagtggc 660
aaggggcgtga ccgtcaatac ggtttcccct ggctacatca agaccgacat gaccgcggcg 720
attcgcccg aacatcctcg aagacatgatt actggcattc ccgtgggccg tctcggccag 780
cccgaggaga tcgcctcgat cgtggcctgg ctggcctccg atcagtctgc ctatgccacc 840
ggcgccgact tctcggtgaa tggcggcatg aacatgcagt gatgcgccat tcgcgccctc 900
gctcagccat gacatgaggt gttccagatg atcgaagtcg ttatcgtcgc cgccactcgc 960
accgccccatcg gcgcttcca ggggagcctg gccggcactc ccggccgttga actgggcgc 1020
acggtgatcc gccgcctgct cgaacagacc gctctggata gcagtcaggt ggatgaagtg 1080
ataactcggcc acgtactcac cgccggtgct ggcagaatac cgctcgccag gcancnggtc 1140

2F06463						
atcgccggcc	tgccacacgc	cgtaccggcg	atgaccctga	acaaggctcg	tggctccggc	1200
ctgaaagccc	tgcacacctgg	cgcggcaggcc	atccgctgtg	gcatgccga	ggtgtgtatt	1260
gccggtggca	tggagaacat	gagcctgtcg	tcctatgtcc	tgcccaaggc	ccgcaccggc	1320
ctgcgcattgg	gccacgcgca	gctggtcgac	agcatgatcg	tcgacggcct	gtggacgccc	1380
ttcaacgact	accacatggg	gatcaactgcc	gagaacctgg	tagacaagta	cgccatcagc	1440
cgcgaagccc	aggacgaatt	cgccgcccgc	tcgcagcaga	aagccgtggc	cgccatcgag	1500
accggtcgct	tccgcgacga	gatcgccccg	gtgagcattc	cgcagcgcaa	ggcgaggcg	1560
ctgagcttcg	acaccgacga	acagccacgc	gccggcacca	ccgcccagtc	gctggcaag	1620
ctgaaaccgg	ccttcaagaa	cgacggcagc	gttactgccc	gcaacgcttc	cagtctcaac	1680
gacggcgccg	ccgcggtaact	gctgatgagt	gcggcaaagg	ccgcagcgct	tggctgtcca	1740
gtgctggcga	agatcgccgc	ctacgccaat	gccggcgtcg	acccggcgat	catgggtatc	1800
ggaccggtgt	cggccacccg	cagttgcctg	gagaaggcgg	gctggagtct	ggcagagctg	1860
gatctgatcg	aggccaatga	agccttcgctg	gcccaggccc	tggccgtggg	tcaggagctg	1920
ggctgggatg	ctggcagggt	taacgtcaac	ggcggcgcca	tcgcccctcg	ccacccatt	1980
ggcgccctccg	gctgcccggt	actggtcagc	ctgctgcatt	aaatgctcag	gcgcgacgccc	2040
aaaaaaaggcc	tcgctaccct	gtgtatcggt	ggcggccagg	gcgtggcgct	ggccatcgag	2100
cgctgagtga	cgctttcgctg	actctgccgg	acgtcccccc	ctgcacccgc	accgccaggc	2160
tggccgtgcg	cttacgtctc	gacatgatcg	caccgcgggc	gcggcttttgc	ttttcatatt	2220
cctggagacg	ccatggacaa	cggacacacc	tttgctcaact	actggtcggg	tcaggcgccc	2280
ttcatcgcca	gcttcgtcct	gcagcaactg	cgcttatacg	tggcgaaaa	tacttggttc	2340
agcgggcacg	accaaagcca	gtggttcgac	gtacctgtcg	aggcgttgga	gcaactgcag	2400
gcggactacc	aacaacagtg	ggccgaactt	ggccagcaat	tgctgagctg	ccagccgttc	2460
gcattcagcg	atcgctcgctt	cgcaggatggc	aactggagcg	aaccgctgtt	cggccctcg	2520
gctgccttct	acctgctgaa	ttccggtttc	ctgctgaaac	tgttggagct	tctccccatc	2580
gatgagcaga	agccccgcca	gctgttcgt	tacttgcatt	agcaagcgat	tgccgcaagc	2640
cccccaagta	actttctgct	gagcaaccct	gatgccctgc	aacgcctagt	ggaaacccag	2700
ggcgccagcc	tactaagtgg	cctgttgcatt	cttgccagtg	acctgcaggc	aggcaagttg	2760
cgccaatgtg	acttggcga	tttcgaagtc	ggcgtgaatc	tggccaccac	ccctgggtgcc	2820
gtggtaactgg	aaacccctct	gttccagctg	atccagtatt	cgcgcgtcag	cgaaacgcac	2880
taccagcggc	cgatattcat	ggtcccgccc	tggatcaaca	agtactacat	ccttgacctc	2940
gggccccaaa	actctctaatt	ccgtcatcta	ctggagcggag	gccatcaagt	ttttctgatg	3000
tcctggcgca	acttcactca	ggaacaggcc	gacatcacct	gggagcagat	catccaggac	3060

2F06463

ggagtatca	gcccgtcg	cactaccgg	gccatcagt	gtgagcgcca	cctgaactgt	3120
ttgggttct	gcattggcg	caccatgct	agttgcgctc	tagcggtgct	ggcagcgcgt	3180
ggcaccagg	acattgccag	cctgagtcta	ttcgccactt	ttcttgacta	ccttgatacc	3240
ggccgatca	gcgtcttcgt	cgtgagcaa	ctggtggcct	accgtgagcg	caccatcggt	3300
ggccatggtg	gcaaattgtgg	cctgttccgc	ggtgaggaca	tggcaatac	cttctccctg	3360
ctgcggccca	acgagctgtg	gtggaactac	aacgtagaca	aatatctcaa	ggggcagaag	3420
ccgctggctc	tgggtctact	gttctggaac	aacgacagca	ccaatctgcc	ggggccccctg	3480
tattgctggt	atctgcgcca	cacctacctg	cagaacgacc	tcaaattcggg	ggagttggat	3540
ctgtcggcg	tcaagttgga	tctgcgggcc	atagacgcac	cagcctacat	cttgggaacc	3600
catgacgacc	acatcgtgcc	ctggcgaagc	gcctatgcca	gcacggaatt	gctgggaggt	3660
ccaaagcgct	ttgtcctcgg	cgcctccggc	cacatcgccg	gggtgatcaa	cccgccagat	3720
aggaacaagc	gccattactg	ggtcaatgaa	cacatagcgc	cggtagctga	cgactggctg	3780
cagggagctc	agcagcattc	cggcagttgg	tgggtgact	ggttcgcctg	gttgaccggc	3840
tatgccggcc	cacgcaagcc	tgccatca	atgctggca	gtgccgagta	ccccccgctt	3900
gaacatgcgc	caggacgtta	tgtgaagcta	tga			3933

<210> 16
<211> 251
<212> PRT
<213> Pseudomonas sp. HJ-2

<220>
<221> variation
<222> (161)
<223> Xaa = Asp, Ala, Gly or Val

<400>	16															
Met	Gly	Thr	Ala	Ser	Asn	Ala	Ala	Arg	Ile	Ala	Leu	Val	Thr	Gly	Gly	
1									10						15	
Met	Gly	Gly	Ile	Gly	Thr	Ala	Ile	Ser	Gln	Arg	Leu	His	Arg	Asp	Gly	
			20					25							30	
Phe	Thr	Val	Val	Val	Gly	Cys	Asn	Pro	Tyr	Ser	Ser	Arg	Lys	Ala	Ser	
									40						45	
Trp	Ile	Ala	Thr	Gln	Leu	Glu	Ala	Gly	Phe	His	Phe	His	Cys	Ile	Asp	
									50						55	
Cys	Asp	Ile	Thr	Asp	Trp	Asp	Ser	Thr	Arg	Gln	Ala	Phe	Asp	Met	Val	
									65						70	
His	Glu	Thr	Val	Gly	Pro	Ile	Asp	Val	Leu	Val	Asn	Asn	Ala	Gly	Ile	
									85						90	
Thr	Arg	Asp	Gly	Thr	Phe	Arg	Lys	Met	Ser	Pro	Glu	Asn	Trp	Lys	Ala	
								100							105	
															110	

2F06463

Val Ile Asp Thr Asn Leu Thr Gly Leu Phe Asn Thr Thr Lys Gln Val
 115 120 125
 Ile Glu Gly Met Leu Ala Lys Gly Trp Gly Arg Val Ile Asn Ile Ser
 130 135 140
 Ser Ile Asn Gly Gln Arg Gly Gln Phe Gly Gln Thr Asn Tyr Ser Ala
 145 150 155 160
 Xaa Lys Ala Gly Ile His Gly Phe Ser Met Ala Leu Ala Arg Glu Val
 165 170 175
 Ser Gly Lys Gly Val Thr Val Asn Thr Val Ser Pro Gly Tyr Ile Lys
 180 185 190
 Thr Asp Met Thr Ala Ala Ile Arg Pro Asp Ile Leu Glu Asp Met Ile
 195 200 205
 Thr Gly Ile Pro Val Gly Arg Leu Gly Gln Pro Glu Glu Ile Ala Ser
 210 215 220
 Ile Val Ala Trp Leu Ala Ser Asp Gln Ser Ala Tyr Ala Thr Gly Ala
 225 230 235 240
 Asp Phe Ser Val Asn Gly Gly Met Asn Met Gln
 245 250

<210> 17
 <211> 392
 <212> PRT
 <213> Pseudomonas sp. HJ-2

<220>
 <221> variation
 <222> (69)
 <223> Xaa = Glu or Asp

<220>
 <221> variation
 <222> (70)
 <223> Xaa = Gln, Pro, Arg or Leu

<400> 17
 Met Ile Glu Val Val Ile Val Ala Ala Thr Arg Thr Ala Ile Gly Ala
 1 5 10 15

Phe Gln Gly Ser Leu Ala Gly Thr Pro Ala Val Glu Leu Gly Ala Thr
 20 25 30

Val Ile Arg Arg Leu Leu Glu Gln Thr Ala Leu Asp Ser Ser Gln Val
 35 40 45

Asp Glu Val Ile Leu Gly His Val Leu Thr Ala Gly Ala Gly Arg Ile
 50 55 60

Pro Leu Ala Arg Xaa Xaa Val Ile Ala Gly Leu Pro His Ala Val Pro
 65 70 75 80

Ala Met Thr Leu Asn Lys Val Cys Gly Ser Gly Leu Lys Ala Leu His
 85 90 95

2FO6463

Leu Gly Ala Gln Ala Ile Arg Cys Gly Asp Ala Glu Val Val Ile Ala
100 105 110

Gly Gly Met Glu Asn Met Ser Leu Ser Ser Tyr Val Leu Pro Lys Ala
115 120 125

Arg Thr Gly Leu Arg Met Gly His Ala Gln Leu Val Asp Ser Met Ile
130 135 140

Val Asp Gly Leu Trp Asp Ala Phe Asn Asp Tyr His Met Gly Ile Thr
145 150 155 160

Ala Glu Asn Leu Val Asp Lys Tyr Gly Ile Ser Arg Glu Ala Gln Asp
165 170 175

Glu Phe Ala Ala Ala Ser Gln Gln Lys Ala Val Ala Ala Ile Glu Thr
180 185 190

Gly Arg Phe Arg Asp Glu Ile Val Pro Val Ser Ile Pro Gln Arg Lys
195 200 205

Gly Glu Ala Leu Ser Phe Asp Thr Asp Glu Gln Pro Arg Ala Gly Thr
210 215 220

Thr Ala Glu Ser Leu Gly Lys Leu Lys Pro Ala Phe Lys Asn Asp Gly
225 230 235 240

Ser Val Thr Ala Gly Asn Ala Ser Ser Leu Asn Asp Gly Ala Ala Ala
245 250 255

Val Leu Leu Met Ser Ala Ala Lys Ala Ala Ala Leu Gly Leu Pro Val
260 265 270

Leu Ala Lys Ile Ala Ala Tyr Ala Asn Ala Gly Val Asp Pro Ala Ile
275 280 285

Met Gly Ile Gly Pro Val Ser Ala Thr Arg Ser Cys Leu Glu Lys Ala
290 295 300

Gly Trp Ser Leu Ala Glu Leu Asp Leu Ile Glu Ala Asn Glu Ala Phe
305 310 315 320

Ala Ala Gln Ala Leu Ala Val Gly Gln Glu Leu Gly Trp Asp Ala Gly
325 330 335

Arg Val Asn Val Asn Gly Gly Ala Ile Ala Leu Gly His Pro Ile Gly
340 345 350

Ala Ser Gly Cys Arg Val Leu Val Ser Leu Leu His Glu Met Leu Arg
355 360 365

Arg Asp Ala Lys Lys Gly Leu Ala Thr Leu Cys Ile Gly Gly Gly Gln
370 375 380

Gly Val Ala Leu Ala Ile Glu Arg
385 390

<210> 18
<211> 566
<212> PRT
<213> Pseudomonas sp. HJ-2

2F06463

<400> 18
 Met Asp Asn Gly His Thr Phe Ala His Tyr Trp Ser Gly Gln Ala Pro
 1 5 10 15
 Phe Ile Ala Ser Phe Val Leu Gln Gln Leu Arg Leu Tyr Val Ala Gln
 20 25 30
 Asn Thr Trp Phe Ser Gly His Asp Gln Ser Gln Trp Phe Asp Val Pro
 35 40 45
 Val Glu Ala Leu Glu Gln Leu Gln Ala Asp Tyr Gln Gln Gln Trp Ala
 50 55 60
 Glu Leu Gly Gln Gln Leu Leu Ser Cys Gln Pro Phe Ala Phe Ser Asp
 65 70 75 80
 Arg Arg Phe Ala Ser Gly Asn Trp Ser Glu Pro Leu Phe Gly Ser Leu
 85 90 95
 Ala Ala Phe Tyr Leu Leu Asn Ser Gly Phe Leu Leu Lys Leu Leu Glu
 100 105 110
 Leu Leu Pro Ile Asp Glu Gln Lys Pro Arg Gln Arg Leu Arg Tyr Leu
 115 120 125
 Ile Glu Gln Ala Ile Ala Ala Ser Ala Pro Ser Asn Phe Leu Leu Ser
 130 135 140
 Asn Pro Asp Ala Leu Gln Arg Leu Val Glu Thr Gln Gly Ala Ser Leu
 145 150 155 160
 Leu Ser Gly Leu Leu His Leu Ala Ser Asp Leu Gln Ala Gly Lys Leu
 165 170 175
 Arg Gln Cys Asp Leu Gly Asp Phe Glu Val Gly Val Asn Leu Ala Thr
 180 185 190
 Thr Pro Gly Ala Val Val Leu Glu Thr Pro Leu Phe Gln Leu Ile Gln
 195 200 205
 Tyr Ser Pro Leu Ser Glu Thr Gln Tyr Gln Arg Pro Ile Phe Met Val
 210 215 220
 Pro Pro Trp Ile Asn Lys Tyr Tyr Ile Leu Asp Leu Gly Pro Glu Asn
 225 230 235 240
 Ser Leu Ile Arg His Leu Leu Glu Arg Gly His Gln Val Phe Leu Met
 245 250 255
 Ser Trp Arg Asn Phe Thr Gln Glu Gln Ala Asp Ile Thr Trp Glu Gln
 260 265 270
 Ile Ile Gln Asp Gly Val Ile Ser Ala Leu Arg Thr Thr Arg Ala Ile
 275 280 285
 Ser Gly Glu Arg His Leu Asn Cys Leu Gly Phe Cys Ile Gly Gly Thr
 290 295 300
 Met Leu Ser Cys Ala Leu Ala Val Leu Ala Ala Arg Gly Asp Gln Asp
 305 310 315 320
 Ile Ala Ser Leu Ser Leu Phe Ala Thr Phe Leu Asp Tyr Leu Asp Thr
 325 330 335

2F06463

Gly Pro Ile Ser Val Phe Val Asp Glu Gln Leu Val Ala Tyr Arg Glu
340 345 350

Arg Thr Ile Gly Gly His Gly Gly Lys Cys Gly Leu Phe Arg Gly Glu
355 360 365

Asp Met Gly Asn Thr Phe Ser Leu Leu Arg Pro Asn Glu Leu Trp Trp
370 375 380

Asn Tyr Asn Val Asp Lys Tyr Leu Lys Gly Gln Lys Pro Leu Ala Leu
385 390 395 400

Gly Leu Leu Phe Trp Asn Asn Asp Ser Thr Asn Leu Pro Gly Pro Leu
405 410 415

Tyr Cys Trp Tyr Leu Arg His Thr Tyr Leu Gln Asn Asp Leu Lys Ser
420 425 430

Gly Glu Leu Asp Leu Cys Gly Val Lys Leu Asp Leu Arg Ala Ile Asp
435 440 445

Ala Pro Ala Tyr Ile Leu Gly Thr His Asp Asp His Ile Val Pro Trp
450 455 460

Arg Ser Ala Tyr Ala Ser Thr Glu Leu Leu Gly Gly Pro Lys Arg Phe
465 470 475 480

Val Leu Gly Ala Ser Gly His Ile Ala Gly Val Ile Asn Pro Pro Asp
485 490 495

Arg Asn Lys Arg His Tyr Trp Val Asn Glu His Ile Ala Pro Val Ala
500 505 510

Asp Asp Trp Leu Gln Gly Ala Gln Gln His Ser Gly Ser Trp Trp Gly
515 520 525

Asp Trp Phe Ala Trp Leu Thr Gly Tyr Ala Gly Pro Arg Lys Pro Ala
530 535 540

Ile Thr Met Leu Gly Ser Ala Glu Tyr Pro Pro Leu Glu His Ala Pro
545 550 555 560

Gly Arg Tyr Val Lys Leu
565